

CLAIMS

What is claimed is:

1. A method for power control in spread spectrum communication systems, the
5 method comprising the steps of:
 providing two or more multiplexed registers coupled to a control circuit, the
 multiplexed registers controlled by a control signal, the registers containing power
 control values;
 measuring a transmit power;
10 receiving the TPC information;
 determining whether the TPC information calls for an increase or decrease in power;
 comparing the new TPC information to the last TPC information, wherein if the TPC
 information is the same as the last TPC information, calculating a new power
 control value using the TPC information and measured transmit power, and
15 writing the new power control value to the next selected register; and
 applying the control signal corresponding to the next selected register to the
 multiplexer to couple the value of next selected register to the control circuit.

2. The method of claim 1, wherein the measuring step occurs at every slot a fixed delay time after an uplink transmit slot to account for the time constant for transmit power detector filtering.

5 3. The method of claim 1, wherein the determining step includes deciding on a control signal where multiple TPC signals are present, such as during soft handoff.

10 4. The method of claim 1, wherein the steps are repeated during each timing slot of the particular communication system.

15 5. The method of claim 1, wherein the registers are alternately selected by the control line at every slot.

20 6. The method of claim 1, wherein the same steps are performed for other incremental control circuit processes.

25 7. The method of claim 1, wherein the control line remains constant from slot to slot where the output power remains constant.

8. A method for power control in spread spectrum communication systems, the method comprising the steps of:

providing multiplexed dual registers coupled to a control circuit, the multiplexed dual register controlled by a control signal, the registers containing power control

5 values;

measuring a transmit power;

receiving the TPC information;

determining whether the TPC information calls for an increase or decrease in power;

comparing the new TPC information to the last TPC information, wherein if the TPC

10 information is the same as the last TPC information, calculating a new power control value using the TPC information and measured transmit power, and

writing the new power control value to the next selected register; and

applying the control signal corresponding to the next selected register to the multiplexer to couple the value of next selected register to the control circuit,

15 wherein the registers are coupled alternately to the control circuit at every slot; and

repeating the steps of measuring through applying for each timing slot of the communication system.

9. The method of claim 8, wherein the measuring step occurs at every slot a fixed delay time after an uplink transmit slot to account for the time constant for transmit power detector filtering.

5 10. The method of claim 8, wherein the determining step includes deciding on a control signal where multiple TPC signals are present, such as during soft handoff.

11. The method of claim 8, wherein the same steps are performed for other incremental control circuit processes.

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12. An apparatus to control power in spread spectrum communication systems, the apparatus comprising:

a plurality of hardware registers, the registers for containing calculated power control values;

5 a multiplexer coupled to the hardware registers, the multiplexer controlled by a control line to switchably select one of the registers;

a control circuit coupled to the multiplexer,

a processor for providing a control signal to the control line, the processor measures a transmit power, receives the TPC information, determining whether the TPC
10 information calls for an increase or decrease in power, compares the TPC information to the last TPC information, wherein if the TPC information is the same as the last TPC information, the processor calculates an new power control value using the measured transmit power and TPC information and writes the new power control value to the next selected register, and applies the control signal
15 corresponding to the next selected register to the multiplexer to couple the value of the next selected register to the DAC.

13. The apparatus of claim 12, further comprising a power amplifier to drive transmit power coupled to the DAC.

14. The apparatus of claim 12, wherein the processor measures transmit power for every slot at fixed delay time after an uplink transmit slot to account for the time constant for transmit power detector filtering.

15. The apparatus of claim 12, wherein if multiple TPC signals are present, such as during soft handoff, the processor decides on a control signal.

16. The apparatus of claim 12, wherein the registers are alternately selected by the control line at every slot.

17. The apparatus of claim 12, further comprising other sets of multiplexed registers operated on by the processor in the same manner to control other incremental control circuit processes.

18. The apparatus of claim 12, wherein the control line remains constant from slot to slot where the output power remains constant.